IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor	: KokHoe Chia et al.	Group Art Unit: 2188
Appln. No.	: 10/664,611	Examiner: C. E. Walter
Filed	: September 18, 2004	
For	: METHOD AND APPARATUS FOR MANAGING BUFFER RANDOM ACCESS MEMORY	
Docket No.	: S104.12-0040/STL 11343	

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Commissioner for Patents
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Sir:

REMARKS

Applicant respectfully requests a Pre-Appeal Brief Review of the rejection of claims 15-17 under 35 U.S.C. §102(b) as being anticipated by Tsuchimoto et al (hereafter Tsuchimoto), U.S. Patent No. 6,336,202 B1, since the rejection is based on clear error of fact and omission of essential elements to establish a prima facie rejection. This rejection is unsupported by Tsuchimoto and is based on either a misreading of Tsuchimoto or a misapplication of Tsuchimoto to Applicants' claims.

Claim Rejections under 35 U.S.C. § 102

Claims 15-17 stand rejected under 35 U.S.C. §102(b) as being anticipated by Tsuchimoto in the Final Office Action mailed April 4, 2006 relating to the above-identified application.

1. Independent Claim 15

Independent claim 15 recites a method of managing a buffer random access memory having a first portion allocated for a defect table and a second portion allocated for data caching. The method includes the step of "determining actual memory space of the first portion of the buffer random access memory which is actually occupied by the defect table in order to identify unused memory space of the first portion." The method then includes the step of "reallocating the unused memory space of the first portion of the buffer random access memory for use in data caching."

2. Tsuchimoto Does Not Anticipate Claims 15-17

As was argued in the Amendment filed on January 23, 2006, Tsuchimoto fail to teach or suggest either of two claim limitations found in independent claim 15, and thus there is an omission of essential elements to establish a prima facie rejection. These omissions were discussed on pages 8 and 9 of the Amendment filed on January 23, 2006.

a. The Step of Determining Actual Memory Space is Not Anticipated

In support of the rejection of independent claim 15 in the Final Office Action mailed on April 4, 2006, the Office Action stated that Tsuchimoto teaches "determining actual memory space of the first portion of the buffer random access memory occupied by the defect table to identify unused memory space of the first portion." To support this position, the Office Action further stated that the controller as illustrated in Fig. 1 of Tsuchimoto "must inherently make a determination which data in the RAM is the defect table and which area in the RAM is for data caching in order for Tsuchimoto's system to work." Tsuchimoto does not support an interpretation which satisfies this limitation of claim 15, and thus the teachings of Tsuchimoto do not support this assertion. Accordingly, there is no basis to support the rejection under 35 U.S.C. §102(b), as a method step required in claim 15 is missing in this prior art reference.

As discussed in the background of the present application, conventionally the size of the defect table has typically been fixed across all disc drives of a particular type with different numbers of headers. A larger defect table size has usually been required to insure that defects can be

recorded, while at the same time meeting production yield requirements for the particular type of drive. Generally, production yield requirements include having a minimum number of storage devices fail due to insufficient defect table size. As a result, on some drives, the defect table will be larger than necessary. Please see the application, page 1, lines 23-32. There is no teaching by Tsuchimoto to conclude that the system disclosed by that reference operates any differently than in this conventional manner. Consistent with this, admittedly, the Tsuchimoto system would likely determine which data in the RAM is allocated for the defect table and which area in the RAM is allocated for data caching. It does not follow, however, that in order to work the Tsuchimoto system must inherently determine actual memory space of the first portion (i.e., the portion defined in the preamble of claim 15 as being allocated for the defect table) of the buffer random access memory which is actually occupied by the defect table to identify unused memory space of the first portion. Tsuchimoto simply does not provide such a teaching. Lacking such a teaching in the reference itself, interpreting Tsuchimoto in this manner in view of the teachings of the present application represents impermissible hindsight. Lacking a specific teaching of this claim limitation, claims 15-17 cannot be anticipated by Tsuchimoto.

b. The Step of Reallocating the Unused Memory Space is Not Anticipated

Also in support of the rejection of independent claim 15, the Office Action stated that Tsuchimoto teaches "reallocating the unused memory space of the first portion of the buffer random access memory for use in data caching [*sic*] (the remaining memory area in the RAM, not being used to store the variable sized defect table can now be used (i.e., allocated) for data caching purposes." In support of this assertion, the Office Action referred to col. 5, lines 57-67 of Tsuchimoto, and stated that "Tsuchimoto aims at minimizing the size of the defect map so that it occupies a minimal amount of RAM in the controller." The Office Action then asserts that "[t]he remaining area of the RAM is now allocated for data caching purposes as described at col. 3, lines 20-25." These assertions are also not supported by the teachings of Tsuchimoto.

First, Tsuchimoto provides no actual teaching of reallocating unused memory space of the first portion of the random access memory for use in data caching. Even if the remaining memory area in the RAM, which is not being used to store the defect table can be used for data caching purposes as asserted in the Office Action, the mere fact that it can be used in this manner does not

provide a teaching of such a reallocation use. The further statement in the Office Action that "[t]he remaining area of the RAM is now allocated for data caching purposes as described at col. 3, lines 20-25" is not in fact supported by that portion of Tsuchimoto or elsewhere.

Second, the fact that Tsuchimoto aims at minimizing the size of the defect map so that it occupies a minimal amount of RAM in the controller is not in and of itself a teaching of the recited reallocating limitation. For example, minimization of defect map sizes can be used to reduce the original RAM allocated for the defect table, while leaving this original RAM allocation fixed across all disc drives of a particular type. Regardless, Tsuchimoto provides no specific teaching or suggestion of the reallocating step recited in independent claim 15, and thus cannot anticipate or render obvious claims 15-17.

Section 3 of the Office Action also provided additional analysis regarding Tsuchimoto's teaching of a reassign table at col. 6, lines 43-65 at col. 7, lines 6-26. The Office Action pointed out that the reassign table can be produced either before or after logical formatting, and that if the table is modified, the amount of memory required to store the information will change, resulting in a change in the amount of memory remaining in the RAM for caching purposes. The Office Action concluded that "[w]hen the table is rewritten, the system will automatically reallocate memory in the RAM based on the determination of how much memory is available within the RAM." (Emphasis added). It is again emphasized that Tsuchimoto in fact provides no such teaching of reallocation. The fact that the table can be modified after logical formatting, changing the actual memory requirements of the table, does not in and of itself lead to the conclusion that RAM allocated for the table will be reallocated for use in data caching. For example, the memory allocated for the table in Tsuchimoto could be sufficiently large to allow for changes to the defect table. While Tsuchimoto is not clear on this issue, it is clear that Tsuchimoto provide no teaching or suggestion of the reallocation step of independent claim 15.

Since Tsuchimoto does not anticipate each and every element of claims 15-17, Applicants respectfully request that the rejection under 35 U.S.C. § 102(b) be withdrawn.

The Director is authorized to charge any additional fees associated with this paper or credit any overpayment to Deposit Account No. 23-1123.

Respectfully submitted,

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